A JOURNEY ON THE RIO ZAMORA, ECUADOR

By J. L. HERMESSEN

The Andes of Ecuador part into two main parallel ranges, known as the Cordillera Occidental and Cordillera Oriental, united at intervals by transverse ridges of inferior height, designated by the Spanish topographical term of *nudos,* literally "knots."[1] The southernmost of these is the Nudo de Cajanuma, which forms the divide between Pacific and Amazon-Atlantic drainage; some twenty-five miles to the north is the Nudo de Acayana y Guagra-uma; and enclosed between the two and the lateral mountain chains is the Basin of Loja (Hoya de Loja). The opposite inner faces of the two Cordilleras are here physiographically similar, but the outer, or Pacific and Amazon versants, respectively, are in distinct contrast. The former, through the withering action of the hot, dry air currents borne up the Catamayo valley from the desert littoral of Peru, is bare of vegetation, while the latter, under the benign influence of perennial rains, is clothed with dense tropical forest.

In the intermontane depression between the two ranges, at an elevation of 2,150 meters (7,053 feet) above sea level,[2] stands the town of Loja. Due west of it the isolated and sharply outlined peak of Villonaco (3,220 meters, or 10,560 feet) rises from the relatively low profile of the Cordillera Occidental, forming a dominant feature of the local topography and a widely visible landmark. It is interesting to note that certain neighboring eminences, Fierro-urcu (3,788 meters, or 12,430 feet) and Colambo (3,094 meters, or 10,150 feet), were occupied as trigonometrical stations in the great triangulation carried from Tulcán, on the Colombian frontier, all through Ecuador down to Payta, in Peru, by the French geodetic commission in 1899-1906, in their revision and extension of the work of the academicians Bouguer, La Condamine, and Godin in the eighteenth century for the measurement of an equatorial arc of a meridian.[3]

The lower slopes of the Cordillera Oriental about the Hoya de Loja are

[1] This peculiar articulation of the Ecuadorian Andes, often obscured in ordinary maps by other detail, is very clearly depicted in a diagram in Dr. Teodoro Wolf's "Geografía del Ecuador." Leipzig, 1892, p. 582. In "Quito to Bogotá," New York, 1917, a diary of travel containing valuable physiographic notes on Ecuador and Colombia, A. C. Veatch describes the Eastern and Western Cordilleras of Ecuador as the parallel rims of a single broad mountain mass. To the separate basins defined by the cross-ranges he appropriately applies the term "mountain park," commonly used to designate certain basins of the southern Rockies.

[2] Wolf's figure, 2,220 meters (7,282 feet), is undoubtedly too high. The engineers of the Inter-Continental Railway Commission, who ran a survey through Loja in 1891-1892, placed it at 7,138 feet (2,176 meters); while Dr. Wilhelm Sievers, on a route survey made by him in 1909 (sheet 3 of his map in 1:500,000, *Petermanns Mitt.*, Vol. 61, 1915, Pl. 25), gives 2,185 meters (7,167 feet). The value which I have adopted is the mean of a series of observations with my own aneroid over a period of some weeks.

[3] Mission du Service Géographique de l'Armée pour la mesure d'un arc de méridien équatorial en Amérique du Sud sous le contrôle scientifique de l'Académie des Sciences, 1899-1906, in 10 volumes; reference in Vol. 3, Part I, Pl. 7, Paris, 1910.

the natural habitat of a number of species of the Peruvian bark tree—*Cinchona* (*officinalis*) *loxensis, C. succirubra, C. calisaya, C. condaminea* (named by Humboldt and Bonpland in honor of La Condamine), etc.—from which the valuable drug quinine is derived. The collection of the bark from wild trees was formerly a considerable industry of the district, but it fell off altogether when the cinchona of the East Indies, introduced from the Andes in the early sixties,[4] came to maturity.

It is in this district that the Rio Zamora has its source. Rising in the western foothills of the Cordillera Oriental the Rio Zamora flows through Loja, where it is joined by the Rio Malacatos.[5] Ten miles farther north, in confluence with the Rio de las Juntas, it breaks through the Andes and enters the province of Oriente, the Amazon region of Ecuador, comprising a northwestern part of the basin of the great river. Vast in extent and largely unknown, unexplored and unmapped, this territory has always been a bone of contention among the republics of Ecuador, Colombia, and Peru. But although the particular portion of it which I visited, on a reconnaissance of the Rio Zamora, was supposedly under the sovereignty of Ecuador, no evidence of administrative authority was to be found there, nor did the savages of the Jíbaro tribe who live there acknowledge allegiance to the government at Quito.

I had thought of following the Zamora all the way into Oriente from Loja, but this was quite impracticable on account of the density of the vegetation and the existence of many deep *quebradas* (gorges) impassable for animals. I was thus obliged to take the trail over the Andes, reaching the river again at a point called Sabanilla. Here the Zamora runs southward, ultimately paralleling the course of all the principal affluents of the Upper Amazon, or Marañon,[6] as it is more usually called above Iquitos, to its union with the latter at the Pongo de Manseriche.

The ascent of the Cordillera, for a distance of five or six miles out of Loja, was fairly gradual, but then became excessively steep, the winding rocky path being worn in places into irregular steps, affording poor foothold and rendering progress very slow and wearisome.

Throughout the Andes and other great mountain ranges of South

[4] The Indian Government entrusted this work to Sir Clements Markham ("Travels in Peru and India," London, 1862). Its success as regards the South American side of the undertaking is credited in large part to the labors of the eminent botanist Spruce: for his work in Ecuador see "Notes of a Botanist on the Amazon and Andes," by Richard Spruce, edited and condensed by Alfred Russel Wallace, 2 vols., London, 1908. On the subject of the cinchona of Loja is an interesting memoir written in 1805 by Fr. José de Caldas: "Memoria sobre el estado de las Quinas en general y en particular sobre las de Loxa." It appears in the volume "Expedición botánica de José Celestino Mutis al Nuevo Reino de Granada [1783-1808] y Memorias inéditas de Fr. José de Caldas [1801-1805]," by Diego Mendoza, Madrid, 1909.

[5] Not to be confused with another river of the same name, rising at Cajanuma on the Pacific side of the Cordillera Occidental and discharging into the Rio Catamayo, which latter, under the name of the Rio de la Chira, reaches the sea near Payta, Peru.

[6] A. Hamilton Rice (From Quito to the Amazon via the River Napo, *Geogr. Journ.*, Vol. 21, 1903, pp. 401-418) quotes the usage of the Brazilian and Peruvian voyageurs, who apply the name Amazon to the stream from the junction of the Ucayali and the Marañon, 100 miles above Iquitos. The historical aspect of the question is very fully discussed in H. J. Mozans: Along the Andes and Down the Amazon, New York and London, 1912, pp. 466-467.

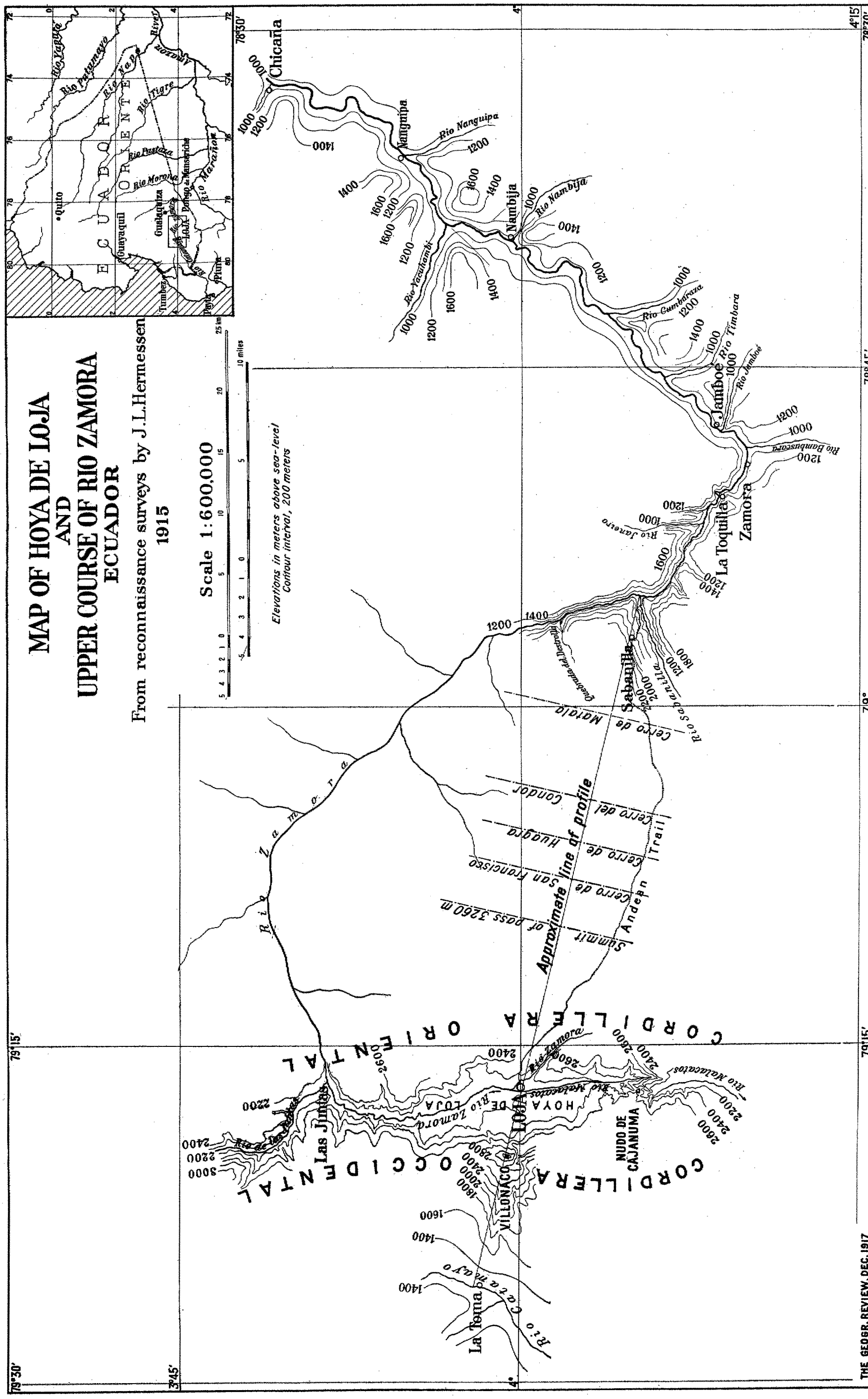

FIG. 1—Original map of the Basin of Loja and the upper Rio Zamora, Ecuador, based on a reconnaissance survey by the author. Scale, 1:600,000. The small rectangle in the inset in the upper right corner shows the general location of the main map.

America there occur, at altitudes between 3,000 and 3,500 meters (10,000 and 11,500 feet), open wind-swept plateaus, termed *páramos,* corresponding in character to the fell-fields of northern latitudes.[7] They are highly specialized plant provinces, exhibiting many rare and curious types, most distinctive amongst which are scattered tufts of cushion-like growth and dwarf trees with flattened or umbrella-shaped tops. Various flowering alpine species are also found here. The *páramos* are almost continuously enveloped in mists and at certain seasons are subjected to icy, driving rains and sleety blasts, against which, in conjunction with the low temperature and rarified atmosphere, the traveler must battle for very life. Every year these lofty tracts claim their toll of victims.

After climbing to its maximum elevation (3,260 meters, or 10,696 feet), the road became much easier, as it traversed a succession of *cuchillas,* or knife-edge ridges. These *cuchillas* are a common feature in the configuration of the Andes: in longitudinal contour they are normally level or gently undulating. From bases of varying widths they rise, with a rapidly increasing degree of acclivity, to elevations of several hundred meters, until at the top they may not exceed one meter in cross section.[8]

Then we again mounted into the frigid, desolate wastes of the *páramos,* and for long we moved, as without motion, in a "wan, chill world," lost in a pallid veil of mist—a world bereft of hue and form, wherein alone reigned

> Night, the shadow of light,
> And life, the shadow of death.

It was late in the day when we gained the last summit on the Cerro de Matala (3,000 meters, or 9,840 feet), and a long and precipitous descent lay ahead. The road here had plainly had its beginning in a natural drainage depression and was still little more than a deeply scoured gully, extremely narrow and tortuous. As we went valleywards woods appeared, and these, lower down again, attained the proportions of high forest. The bed of the trail changed at the same time from bare rock and loose stone to earth and mud, with boggy pockets of uncertain depth. With every step we sank into the wet soil, often stumbling in the failing light against knotted superficial roots and tangled vines and creepers. After about two hours' going under such conditions, trusting wholly to the instinct of our animals, we reached our day's destination, Sabanilla. At the one house which made the place we were hospitably received and served with a welcome supper of roasted plantains, boiled yuca (manioc), and *guayusa*—the last an infusion of the leaves of a plant (*Ilex sp.*) similar to the *maté de Paraguay,* or Paraguay tea.[9]

[7] Cf. E. Warming: Œcology of Plants (English edition by Percy Groom and I. B. Balfour), Oxford, 1909, pp. 258-259. See also Belts of Vegetation in Peru, Fig. 74, p. 123, "The Andes of Southern Peru," by Isaiah Bowman, New York, 1916.

[8] For an explanation of their origin see Alfred Simson: Travels in the Wilds of Ecuador, and the Exploration of the Putumayo River, London, 1888, pp. 96-97.

[9] The *guayusa* is a true holly (ilex), allied to the maté, or Paraguay tea (*Ilex paraguayensis*), but with much larger leaves. Spruce, *op. cit.*, Vol. 2, p. 453.

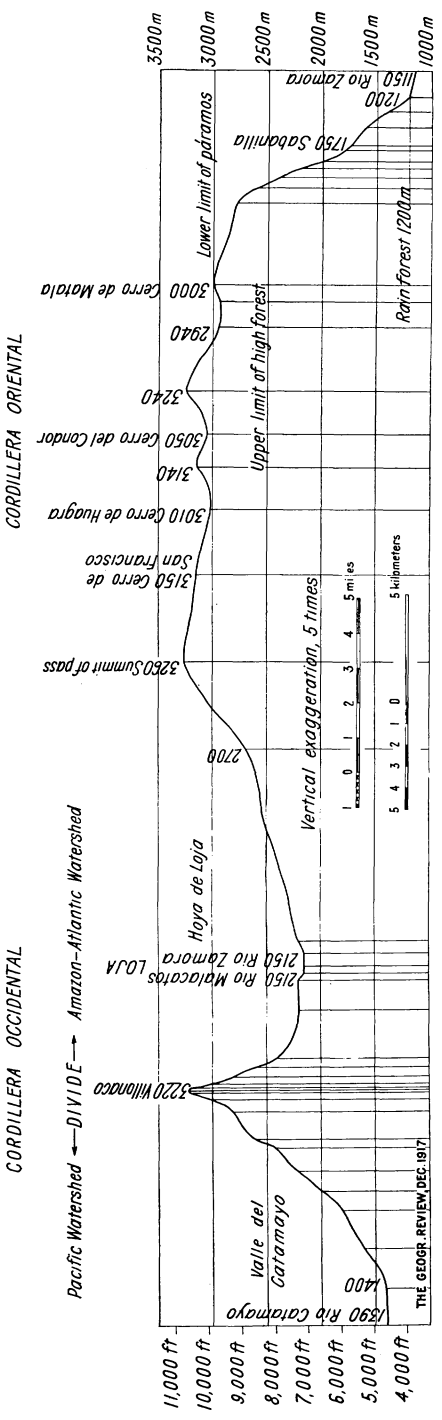

FIG. 2—Approximate transverse profile of the Eastern and Western Cordilleras of the Andes in southern Ecuador on the line indicated on Figure 1 roughly at right angles to their axes through Loja (latitude 4° S.). Horizontal scale, 1:350,000; vertical scale, 1:70,000.

From the trail on the open mountainside, dropping to the Rio Sabanilla five hundred meters below, morning showed us a scene of surpassing grandeur—a stupendous array of splendid heights, encompassing a multitude of peaks, escarpments, spurs, and ridges, over all of which was spread the mantle of a virgin tropical vegetation, softening every outline, delicately fringing every crest. Immediately below us, to the south and west, lay the valley of the Rio Sabanilla; and far through the widening hills, trending southward and eastward, we could trace the meandering course of the Rio Zamora.

Coming to the Sabanilla, which we crossed by a wooden bridge, we could see its meeting with the Zamora. The road now led towards the latter river, whose channel, broken by numerous falls, it followed all the way on. Many mountain rills came tumbling down the ravines in glistening cascades. More often they ended in clear shady pools near the trail; but now and then they developed into deeper *arroyos,* or intermittent streams, which had to be forded. These offered no serious impediment at the time, but upon our return some weeks later, when the seasonal rains had converted them into turbid torrents and landslides had buried the road under avalanches of débris, we suffered more than one awkward hold-up.

Much of the path was through lofty forest—true tropical rain-forest—embracing a luxuriant diversity of character in its successive stories of vegetation, beginning with the clean moisture-saturated "floor" of humus, carpeted with mosses, ferns and other shade-loving types, rising to groups of herbaceous growth with large variegated foliage and dark-green glossy-leaved shrubs, mixed with graceful tree ferns and slender palms, to its culmination in tall great-trunked trees, their branches draped with hordes of epiphytic plants, vines, and lianas.

At a distance from Sabanilla of about nine miles we came to an open grassy knoll, La Toquilla, so termed from the occurrence there of a cluster of the plant that goes by that name in Ecuador. The *toquilla* (*Carludovica palmata*) is a peculiar stemless species. From its aërial roots spring long slight stalks bearing the fan-shaped leaves. These leaves are the material from which the so-called Panama hats are made.

At mid-day we arrived at Zamora, which place, although always shown on maps of Ecuador in large print (presumably because of the historic interest of the name), consists of nothing more than a few dilapidated palm shacks, the remnant of a former Ecuadorian colony. I say "Ecuadorian" in contradistinction to Indian, because no Jíbaros live there, nor indeed do they usually come so far up the river. Zamora was once, like the lost cities of Mendoza, Sevilla del Oro, and Logroño,[10] one of the richest settlements of the conquerors of the New World. In the year 1599 the latter three were totally destroyed by the Jíbaros, whom the Spaniards had never been able completely to subjugate. Zamora, also ruined, was revived for a time, to be finally abandoned in 1622.

Neither here nor anywhere else could I glean the least confirmation of Villavicencio's statement as to the alleged discovery, by a contemporary governor of Loja, of "magnificent remains" of the erstwhile city of Zamora.[11] So far, indeed, as I could learn, no vestige of its existence had ever come to light, and its site remained unknown. I passed twice on the Rio Zamora within a few miles of the precise geographical position he assigns to the place,[12] and it seemed incredible that, if any ruins were there or thereabouts, they should never have been found by the inhabitants of the locality. The testimony of Wolf, writing thirty-four years after Villavicencio, was that no traces of the once famous city of Zamora had ever been discovered;[13] so that the latter's story may be regarded as romance.

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[10] Manuel Villavicencio: Geografía de la República del Ecuador, New York, 1858, pp. 87, 156, 276, 277, 419, 420, 425; Simson, *op. cit.*, pp. 53-54; C. R. Enock: Ecuador: Its Ancient and Modern History, Topography, and Natural Resources, Industries and Social Development, London, 1914, p. 340.

[11] . . . . "el Zamora, que vió florecer la ciudad de su nombre i cuyos magníficos restos han sido últimamente descubiertos por el gobernador de Loja." *Op. cit.*, p. 156.

[12] "En el año de 1548 erijieron los españoles esta provincia en gobierno, y el año de 1549 se hizo la fundación de la ciudad de Zamora, entre los rios Zamora y Yancuambi, en 4 grados de latitud meridional y 30 minutos de lonjitud occidental." *Op. cit.*, p. 278. (This longitude has reference to the meridian of Quito.)

[13] "Geografía del Ecuador," p. 31, footnote.

The place now called Zamora marks the fall-line of the river. Its elevation at this spot is 1,000 meters (3,280 feet); at Loja it is 2,150 meters (7,050 feet), thus giving in the 100 kilometers between these points a virtual gradient of 1.15 per cent.

Just after leaving Zamora we crossed the Rio Bambuscara, flowing into the main stream on the right from the south. Several miles farther brought us to another river, the Jamboé, also entering the Zamora from the south. On the other side of it we came to the abode of a white man, a native of Loja, who had opened up a little estate in these remote wilds. By his courteous invitation I made his house my headquarters while I was on the river.

Shortly after our arrival a number of Jíbaros of both sexes issued in single file from a cane-field bordering the river and approached the house. They had been employed in various agricultural tasks about the place and were coming for their daily pay, which they took in goods, money being unknown to them. The men were rather under middle height, thick-set, and with broad, well-developed chests and large hands and feet. They had mahogany-tinted skins and tolerably regular features. Several of them had their teeth stained black. The men wore their hair, which was long, black, and straight, in a fantastic mode, with two locks, twisted like pig-tails and bound with cotton or fiber, depending from the forehead just in front of the ears; while about the tops of their heads were stuck tufts of bright-colored birds' feathers and small wooden combs. In another matter of decoration they follow a custom common to several tribes of the Upper Amazon basin:[14] the lobes of their ears were pierced, and in them were inserted sticks of bamboo, about half an inch thick and about eight inches long, the anterior ends of which, in some cases, had feathers fixed in them. Their faces were hideously smeared all over with anatto, a brick-red pigment obtained from the seeds of the plant *Bixa orellana*.[15] They had no beards, but only a few hairs on the upper lip. As I afterwards learned, depilation is generally practiced by the Jíbaros.[16] The clothing of the men consisted of a piece of a coarse cotton fabric, of a uniform striped pattern dyed a dull reddish-brown, about three feet wide, worn like a kilt and tied about the waist with a girdle of fiber. The dress of the women was the same, but with the addition of another piece of similar material thrown over one shoulder and there fastened in such a manner as to hide the breasts. Their faces were not painted as the men's, but some of them had an ornament consisting of a bit of stick, of the size of a match, projecting horizontally from a hole made in the underlip.[17] The women were very

[14] Cf. A. Hamilton Rice, *op. cit.*, p. 409; Thomas Whiffen: The North-west Amazons, London, 1915, p. 85; and W. E. Hardenburg: The Putumayo, The Devil's Paradise, London, 1912.

[15] H. A. Alford Nicholls: Tropical Agriculture, London, 1906, p. 244. This plant is figured in Plate 42 of Captain Whiffen's book quoted above.

[16] Whiffen, *op. cit.*, pp. 273, 282.

[17] A. Hamilton Rice: The River Uaupés, *Geogr. Journ.*, Vol. 35, 1910, pp. 682-700; reference on p. 695; Whiffen, *op. cit.*, p. 86.

FIG. 3.

FIG. 4.

FIG. 3—The Plaza in Loja. The Cordillera Oriental in the distance.
FIG. 4—The Rio Zamora at Loja.

small in stature and physically not prepossessing. Their hair was dirty, dishevelled, and neglected, and, but for a circlet of tape, unadorned. They wore rude necklaces, armlets, and bracelets of berries, nuts, seeds, and shells, and the skulls and beaks of small birds, strung on fiber thread.

Within a radius of several miles from Jamboé there were several Jíbaro houses, each standing alone in a separate clearing a little way back from the river, with a belt of forest interposed, so that they were effectually concealed from view from the water. All were exactly alike—rectangular in plan, with rounded ends, about 60 feet long by 30 feet wide, and constructed of bamboo on a framework of big poles lashed together with lianas. At either end was a door of solid wood, usually kept securely bolted on the inside. The roof was high-pitched and made of palm thatch. Several families of blood relations lived together in one house. There was no partition between the quarters of the men and those of the women, as Orton and others have noted as a detail of the dwellings of the Indians (Záparos) on the Napo and other rivers of the Oriente province of Ecuador,[18] but the rear portion was always allotted to the females. The only noticeable difference between the two ends of the house consisted in the sleeping arrangements, which, in the case of the men, were simply low tables or platforms of split bamboo,[19] with a superimposed skeleton frame; while the women had covered booths or cubicles. When the regular accommodation of this kind was inadequate to the occasion, men, women, and children reposed in groups, sexes apart, on mats of cane or rush laid on the earth floor. Immediately before each one of these sleeping places a fire was kept burning all the time, day and night. In front of each platform, and at the same height, there was a heavy pole, fixed horizontally in two forked sticks, serving as a rest for the protruding feet of the sleepers, who seemed to delight in toasting them over the glowing embers, indifferent to the flames and sparks that leapt from a fresh blaze. About the middle of the building, suspended from the roof-poles by cords of liana or strips of flexible bark, were trays for holding earthenware pots, bowls, and other household utensils; and fastened to the posts supporting the ridge-pole were woven cane baskets, containing the men's finery—necklaces of berries and seeds of various kinds, and of the bored canine teeth of monkeys (*Cebus*), and decorative tassels of the feathers of Cuvier's toucan (*Ramphastus Cuvieri*) and the iridescent wing-cases of certain beetles (*Chrysophoxa chrysochlora* and *Euchroma gigantea*). Hunting paraphernalia—quivers, poison-pots, etc.,—were hung on the frames of the sleeping platforms, and blow-pipes were kept, for safety, tied against the main posts of the building. The *bodoquera,* or blow-pipe, whose manufacture has been described by Simson,[20] was from eight to ten feet in length. The darts

[18] James Orton: The Andes and the Amazon, New York, 1876, p. 171.

[19] Whiffen, *op. cit.*, p. 47, reports that the Apaporis Indians make shelves or platforms on which they sleep.

[20] *Op. cit.*, p. 155.

used in it were about ten inches long, a little over one-sixteenth of an inch thick in the middle, tapered to a fine point at either end and made out of the rib of the leaf of the *chonta* palm (*Bactris ciliata*). These were held in a quiver fashioned out of a length of bamboo, to which was fixed a spherical gourd, filled with the very light floss of the silk-cotton tree (*Eriodendron anfractuosum*) for tipping the darts to fit the bore of the blow-pipe.[21] The poison-pot was made of half of a small gourd and had a cover or lid attached to it. The poison was a thick, black, viscous compound, its principal ingredient being the juice of the plant *Strychnos toxifera*. Captain Whiffen speaks of the use of the same poison by the Huitoto tribe of the Issa (Putumayo) and Yapurá Rivers.[22]

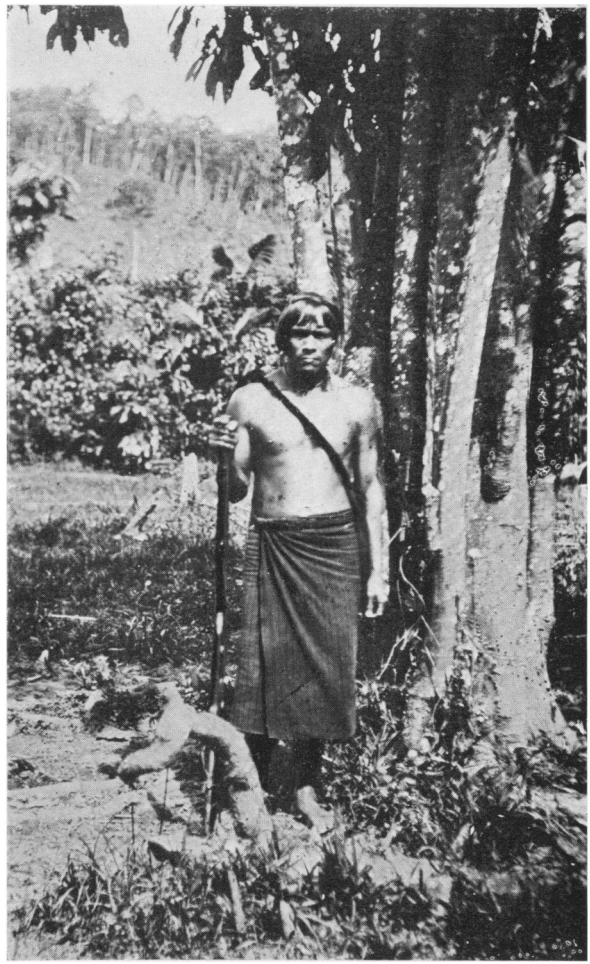

FIG. 5—Jíbaro Indian standing under a wild cacao tree (*Theobroma cacao*) at Jamboé, Rio Zamora. (Photo by the author.)

Yuca of the bitter variety (*Manihot utilissima*), maize (*Zea mais*), plantains (*Musa paradisica*), and ground-nuts (*Arachis hypogaea*) were cultivated for food, each house having its own garden plot in the same clearing, as well as a larger plantation some way off. Yuca and plantains were mostly eaten boiled. From the former the intoxicating liquor *chicha* was made. The method of its elaboration is not nice. The peeled or scraped tuber, after being boiled, is masticated by the women and set aside to ferment. For drinking, some of this unsavory mess is put into a shallow

[21] Cf. H. W. Bates: The Naturalist on the River Amazons, *Everyman's Library* edition, London, 1914, p. 302.

[22] *Op. cit.*, pp. 144-145.

receptacle full of water and worked and stirred with the fingers until the whole is well assimilated. The coarser fiber, as it comes to the surface, is picked out, and the "cup," generally a calabash about a foot in diameter, is then ready to be passed round. To avoid giving offence, I had to take, or feign to take, a sip upon many occasions.

Great quantities of *chicha* are imbibed at Jíbaro feasts, a unique feature of which is that the host entertains vicariously, some other member of the house being appointed to represent him, while he wanders in Elysian fields under the influence of a narcotic made from a vine called *ayahuasca* (Inca, "dead man's vine"; *Banisteria caapi,* Spruce).[23]

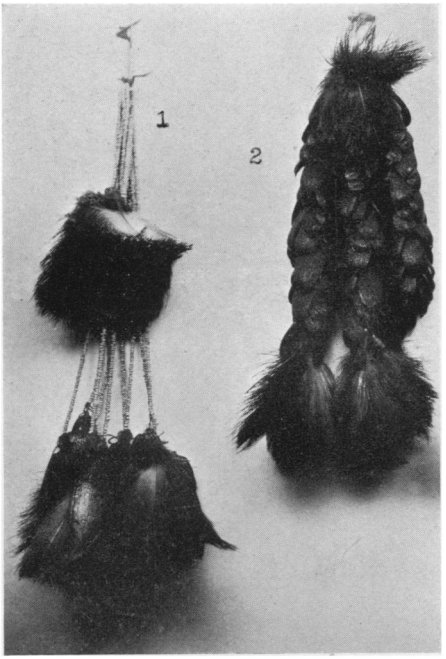

FIG. 6—Jíbaro head ornaments, made of (1) feathers and (2) wing-cases of beetles.

Meals seemed to be going on at odd hours throughout the day. The only regular refection was the morning one, which was served at daybreak. The food, done up as an "olla podrida," or "hot-pot," and contained in a large earthenware caldron, was brought on by the women, who would then retire to eat with the children in their own part of the house.[24] Jíbaro table manners were of the kind made memorable by the feat of the ingenuous Little Jack Horner—but the Jíbaro pot might hold greater surprises than plums.

The women were kept much to themselves and never ate with the men. Their particular concerns were the preparation of the food for the household and the care of the young children. They also performed all agricultural labors after the ground had been cleared. Added to their lot, again, was the making of earthenware vessels; and the results of their handiwork in this way were remarkably good, considering that they were ignorant of the use of the potter's wheel.[25] Most houses also had rude apparatus for spinning and weaving cotton, work which, however, came within the province of the men.

Although wild cacao trees (*Theobroma cacao*) were abundant on the Zamora, the Jíbaros did not appear to have any practical knowledge of the alimentary value of the fruit, for there were many trees to be seen along the river with pods rotted on them. Rubber trees (probably *Sapium verum,* Hemsl.) were also common enough, and the latex, obtained in the

[23] *Op. cit.*, Vol. 2, pp. 423-425. [24] Cf. Whiffen, *op. cit.*, p. 135. [25] Cf. Whiffen, *op. cit.*, pp. 95-96.

usual way by making incisions in the trunk, was utilized in various native articles. In this part of Oriente there were no cattle, horses, mules, or burros. The Jíbaros kept pigs and fowls, but sustained themselves chiefly by the products of the chase.

After putting in some days at Jamboé, making friends with the natives and exploring the surrounding country, we made ready to proceed farther down the Zamora, our objective being a place called Chicaña, a day's journey on the river. As all Jíbaro canoes are communal property, some parleying had to be done with the different chiefs before consent could be obtained to our use of one. The dug-out which we eventually got was navigated by two Jíbaros, hired for the trip, one standing at the bow and the other at the stern, and both having long poles for steering. No effort was required to move the canoe, as the current alone was strong enough to take it along at a good rate.

FIG. 7—(1) Jíbaro necklace of berries and nuts, (2) Jíbaro hand-made earthenware bowl.

There were frequent rapids, some shallow and smoothly graded, others deep and strewn with great boulders and projecting rocks, making formidable obstructions among which the craft was maneuvered by the Indians with consummate skill and grace. On both sides of the river the forest came down to the water's edge, save where the low banks sloped away to wide sandy *playas,* marking the flood-plain.

At an estimated distance of between 25 and 30 miles from Jamboé we passed the mouth of the Yacuhambi (or Yanazambi, as Wolf calls it), a river of respectable size flowing into the Zamora from the northwest. Two or three miles farther on we came to the Rio Nanguipa, which discharged into the Zamora on the right. We landed on the opposite bank, at the solicitation of the canoe-men, for a rest at a nearby house to which they conducted us. In it were several Jíbaros, none of whom evinced the least concern at our appearance, even giving me, a white stranger, only a casual glance.

Very curious are the ceremonial conversations (or perhaps, more correctly, monologues) which these Indians exchange, as a preliminary to any natural talk, whenever and wherever they meet. The speaker never looks *at* the individual addressed but allows his eyes to wander all around with an odd air of nonchalance; while the other accents the oration, as it were, by the constant utterance of deep-throated grunts or short, sharp, rapidly repeated ejaculations, translatable, according to one authority,[26] by the Spanish expressions *sí, no, bueno, como no, así es.* And every now and then the hearer expectorates in a manner suggestive of contempt, disgust, or defiance, or indulges in that peculiar clicking of the tongue habitual, it would seem, to all Amazonian tribes, whatever the action may denote.[27] The voice in these effusions is always pitched very low, so that it acquires a ventral timbre, and the hand, with fingers bent in toward the palm, is frequently held in front of the mouth, presumably for acoustic effect. As the harangue proceeds it gathers in strength and vehemence of delivery like the crescendo of a swiftly on-coming storm, while apt emotional gestures and pose lend to the performance a fitting dramatic touch. Then the other holds forth in like manner, and, if several be present, each one has his turn. I listened to many of these extraordinary and really impressive declamations, but never succeeded in learning anything as to their subject or import. Of the few writers who have dealt at all with the Oriente of Ecuador, only one, so far as I am aware, namely, the Rev. Father Vacas Galindo (best known by his map of the republic),[28] makes any mention of these ceremonial speeches. But Captain Whiffen's work, to which numerous references have already been given, presents some interesting analogies in the languages and peculiarities of speech of the tribes of the Issa (Putumayo) and Yapurá Rivers.

A considerable time was thus consumed at the house which we were now visiting. The drinking of *chicha* followed, and, after a decent interval, during which I distributed some presents of gunpowder and shot, small mirrors, beads, and other trifles, we took our departure.

The remainder of the voyage was without incident of any special interest, and at sunset we reached Chicaña. The river at this point was more than 300 feet wide, and the last of the bad rapids had been passed some miles above. On the left was the mouth of an *arroyo,* and into this the canoe was poled, hauled up out of the water onto a bank of shingle, and made fast by a vine rope. A trail which we then took, crossing and re-crossing the sinuous bed of the stream many times, finally brought us to a house. Its extreme seclusion I suspected to be due to the proximity of the Rio Bomboiza and its tributary, the Gualaquiza, with the dwellers on which

[26] The Rev. Father Enrique Vacas Galindo, O.P., in his work "Nankijukima," published at Ambato, Ecuador, in 1895. The title is the name of a Jibaro chief of whom the author writes.

[27] Cf. Simson, *op. cit.*, p. 94; Whiffen, *op. cit.*, p. 249.

[28] Mapa geográfico-histórico de la República del Ecuador, por el R.P. Fray Enrique Vacas Galindo de la Orden de Predicadores, 1:1,500,000, Quito, 1906.

the Zamora Indians were not on the best of terms. Here we spent several days.

On one of our forest excursions we encountered an old clearing, amidst whose rank weed growth stood a deserted habitation. Its late possessor was dead, and it was the custom, I learned, whenever the head of a family died, for the surviving members to abandon the place to the deceased for his tomb, building another house for themselves elsewhere. Peering through the interstices of the crumbling structure, I could see a mummy-like bundle of palm leaves, in which was the corpse, propped up against one of the roof posts, while set close by were vessels containing yuca, plantains, and other edibles, so that the departed might not suffer the pangs of hunger upon his entry into the other life. Captain Whiffen describes a form of intramural burial in which interment is made just beneath the floor of the house, which continues to be occupied. A similar form, in which the house is abandoned, is mentioned by Hardenburg[29] as in vogue among the Huitotos of the Putumayo.

From Chicaña we started back up the river. The first day we got as far as Nanguipa, where a short stop had been made on the way down. On account of the presence of a medicine-man, called to cure a sick woman, many people were gathered at the house. Amongst them were several chiefs with all the insignia of their rank—faces painted and patterned, hair decked with bunches of gaudy feathers, and chests covered with loops of necklaces.[30] At nightfall the shaman, ensconced behind a screen of plantain leaves in the center of the house, began his magic rites. Preluded by an incantation with a not unpleasing rhythmical refrain, to the bizarre accompaniment of rattles and beating of palm branches, came furious blowings and groanings, wonderful ventriloquial effects and guttural noises most appalling—all in the regular sequence of a constantly recurring cycle throughout the night. For hours I listened to the unearthly din and through the murky, smoke-laden air watched the strange shadows cast by the flames of the smoldering fires. When daylight came to end his long vigil, the medicine-man, by the potency of his exorcisms, had drawn out the evil spirit, in the material form of a feather, from the shoulder of the patient.

After a late breakfast in the confusion of the crowded house, we got away from Nanguipa, and went on up stream. Our progress in this direction was very different from what it had been coming down with the current, and continual hard poling was necessary to make headway against it, while the negotiation of the rapids was particularly laborious. When possible, the canoe was kept close in to the bank and its propulsion aided by hauling on the adjacent or overhanging forest growth, but the conformation of these fluvial barriers sometimes compelled the crossing of them near midstream, where naturally it was always more difficult and hazardous.

[29] *Op. cit.*, p. 155.

[30] Cf. Whiffen, *op. cit.*, p. 81.

During the afternoon we arrived at the mouth of the Rio Nambija, where we camped for the night; and the next day saw us back again at Jamboé.

The distance between Chicaña and Jamboé, computed by means of a prismatic compass traverse which I made of the river as we came up it, was about 70 kilometers (43 miles). The tributaries of the Zamora which we passed were (in down-stream order): the Timbara, Cumbaraza, Nambija, and Nanguipa on the right, and the Yacuhambi on the left. In Wolf's map of Ecuador[31] these rivers are correctly named and placed with relation to the Zamora, but the course of the latter on the stretch in question is quite wrong, being shown as southeast, whereas it is actually northeast.

The Zamora, like all the other rivers coming from the Cordillera Oriental, is auriferous,[32] and the Jíbaros have some idea of gold washing. A few grams of the metal which I got from one of them had been amalgamated, but how I could not discover. Mercury for the purpose may have been obtained from Loja or Gualaquiza,[33] or it may have been found in the alluvial deposits of the region, as it sometimes occurs, in a disseminated state, in such formations.[34]

The mean temperature at Jamboé was approximately 22° C. (71.6° F.). The diurnal variation was small but sufficient to render the nights agreeably cool. The atmospheric humidity was probably high. The annual rainfall I judged, by the aspect of the vegetation and other indications, to be between 80 and 90 inches; and this was evenly distributed, there being no well-defined wet and dry seasons.[35]

Despite the low level of their development, the Jíbaros of the Zamora, like those of other parts of the province of Oriente, are by no means an unintelligent people, and in the conditions of their simple life they are valorous, faithful, and industrious. The Jíbaros are not, and never have been, cannibals.[36] Their barbaric art of shrinking and conserving the heads of enemy chiefs slain in war has no connection with anthropophagy. I saw no specimens of the former but quote Simson's description of it:

> They [the Jíbaros of the Pintuc] have a most perfect and finished method of scalping, by which the victim's head is reduced to the size of a moderately large orange, maintaining tolerably well all the features. Only the lips, point of the nose, and all the thicker fleshy portions, of course, acquire too much prominence. To produce these ghastly objects, the skin is cut round the base of the neck, and the entire covering of the skull removed in one piece. This is then dried gradually by means of hot stones placed inside it, until the boneless head shrinks to the required size.[37]

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[31] Carta geográfica del Ecuador, 1:445,000, Leipzig, 1892. Nominally, Dr. Wolf's book, cited in footnote 1, is intended "to accompany and explain the map."

[32] Wolf, *op. cit.*, pp. 310 and 597.

[33] A town of Oriente inhabited by whites. See inset on map, Fig. 1.

[34] *Ibid.*, pp. 253 and 314.

[35] At Napo, 3° farther north, there are no distinctly wet and dry seasons, but most rain falls in May, June, and July. Orton, *op. cit.*, p. 198.

[36] Villavicencio, *op. cit.*, p. 360.

[37] Simson, *op cit.*, pp. 90-91. Compare the custom among the Mundurucus of the Tapajoz, described by W. C. Farabee: The Amazon Expedition, *Univ. of Pennsylvania Museum Journ.*, Vol. 8, 1917, pp. 136-137.

The tribe have no outwardly manifested religious beliefs, other than such as may be involved in the cult of the medicine man. Occasionally individuals would be met who had been baptized, as adults, at Gualaquiza, but they were not professing proselytes. The missions founded in various Amazon regions, from the sixteenth century down to the present day, have made little or no real impression upon the Jíbaro, where he has been reached at all by them;[38] but this is scarcely a matter for wonder, in view of the interruptions which they have constantly suffered through the stormy vicissitudes of South American history. "The first blow to the missions," says Mozans,[39] "came when the Jesuits were expelled from the Spanish colonies in 1767 by Charles III for reasons *ocultas y reservadas.* The second was delivered a few decades later by the leaders of the War of Independence, when members of other religious orders were driven from the scenes of their missionary labors. Since then, owing to the constantly perturbed condition of a greater part of the continent and the crippled financial condition of most of the republics, little has been done for the Indians in the vast territories watered by the Amazon, the Orinoco, and their tributaries; and, as a consequence, many tribes that had, under the missionaries, made such notable advances in civilized life, have lapsed into barbarism and returned to their former wild life in the recesses of the forest." Thus, some twenty years ago the Franciscans established a mission, with schools and a medical dispensary, at Zamora, but after a brief existence its withdrawal was forced under the anti-clerical President Alfaro, during whose régime also the Jesuits were deprived of all authority in Oriente.

On the way back to Loja difficulties with the conveyance of my botanical and other collections necessitated a halt at the Rio Bambuscara, a short distance from Jamboé. The next day's stage, which was also troublesome owing to landslides and swollen *arroyos,* brought us to Sabanilla, where fresh transport arrangements had to be made, entailing a stop of two days. A dawn wet and lowering augured ill, I thought, for the journey over the Cordillera; but the muleteer predicted a good day. Before we had achieved the toilsome ascent of the Cerro de Matala the rain ceased, and we traversed the dreaded *páramos* in fine weather, and by six o'clock in the evening were clattering over the cobbled streets of Loja.

A week later, seaward bound, I turned on the road, under the shadow of Villonaco, to look back again upon the sunlit city below. Aloof and solitary it stood, on the threshold of a primitive world,—a last outpost of the civilization which gave it birth; for only the span of the Andes separated it from the domain of a savage race whose state was still the same as that in which the *conquistadores* first found it nigh upon four centuries ago.

[38] Cf. Simson, *op. cit.*, p. 87.

[39] H. J. Mozans, work cited in footnote 6, p. 451.